

Work Order ID 72459

Monday, July 25, 2011 3:57:25 PM



Page 1

Item ID: D135-751-011

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube Installation

Start Date: 7/25/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 8/5/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date: 7-07-25

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D3492

C

D3507

Rev C

100

0.00



DOCUMENT CONTROL

DC

0.00

Memo

Document Control

Photocopy bluefile & type labels per PPP D135-751-011

CHG001

8/11/2011/76

9/11/2011 11-8-25

1372459

H:\FORMS\Quality Assurance\Approved QAINCROW RevE

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 72459

Monday, July 25, 2011 3:57:25 PM



Page 2

Item ID: D135-751-011

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube Installation

Start Date: 7/25/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 8/5/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120



Skidtubes

Skidtubes

Skidtubes

Memo

0.00

1-Cut Aft end as per dwg D3507

2-Debur ends

3-Drill Aft & Fwd Cap holes using DT8678 & DT8901

4-Locate DT8870 & Drill Ground wire hole on top of Tube.

6-Locate DT8870 with #30 cleco in Ground wire hole then Pilot Drill all X-Bolt holes using #30" drill. ****DO NOT OPEN AFT CAP HOLES****

7-Open crossbolt holes to 0.3125" (3 per side). Drill pilot holes for wearplates using Dt8868, Use DT8892 FOR REAR WEARPLATE HOLES.

8-Open six rear wearplate holes using DT8892. Open holes to 0.297"

9-Open Aft & Fwd Cap holes using .208" drill.

10-Bore out aft end of tube as per Dwg D3507 & Detail "B".

11-Open ground wire hole .297" section E-E

12- Section G-G holes must be laid out manually, open to #30.

13-Debur holes.

✓ Ø 3F11/07/11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 72459

Monday, July 25, 2011 3:57:25 PM



Page 3

Item ID: D135-751-011

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube Installation

Start Date: 7/25/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 8/5/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Sulos/02

Quality Control

(x)

150

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

DL 11/00/02

Hand Finishing

x/

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

1 6 BE11/08/02

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 72459

Monday, July 25, 2011 3:57:25 PM



Page 4

Item ID: D135-751-011

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube Installation

Start Date: 7/25/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 8/5/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

170

0.00



Skidtubes

Skidtubes

Memo

0.00

1-Open X-Bolt holes to .375"(2Places) & .500"(2Places) as per Dwg D3507.
and Detail "F"

2-Counter Sink X-BOLT holes as per Dwg D3507

3-Deburr and blow out chips from inside of tube.

4-Bond web as per Dwg D3507 & QSI 015

A/R 241 Sike Flex Batch: 117516
Exp Date: 12/01/15
start time: 11/08/02
end time: 11/08/04

5-Weld x-bolt (D3504-1/-3)spacers as per Dwg D3507 and Detail C-C & D-D.

A/R AL ROD Batch: m112860

6-Grind welds flush

7-Drill Rivet Holes as per Dwg D3507 Using Dt8871A&B

8-Deburr Rivet holes.

BE 11/08/02

BE 11/08/04
BE 11/08/05

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____
Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 72459

Monday, July 25, 2011 3:57:25 PM



Page 5

Item ID: D135-751-011

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube Installation

Start Date: 7/25/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 8/5/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

S 11/08/08

(E)

Memo

0.00

190



Skidtubes

Skidtubes

Skidtubes

Memo

1-Rivet D3506-1/-3 as per Dwg D3507.

0.00

0.00

(N)

B 11/08/08

200



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

0.00

S 11/08/08

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 72459

Monday, July 25, 2011 3:57:25 PM



Page 6

Item ID: D135-751-011

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube Installation

Start Date: 7/25/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 8/5/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

210

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

IX Ø M-L 11/08/09

220

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

11118344

Memo

0.00

Powder Coating

START TIME: 7:45AM
OVEN TEMPERATURE: 320°F
FINISH TIME: 8:15AM

I Ø J4 u/oe/e

230

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

IX Ø M-L 11/8/10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 72459

Monday, July 25, 2011 3:57:25 PM

Page 7

Item ID: D135-751-011

Accept

Setup Start

Revision ID:

Stop

Item Name: Skidtube Installation

Start Date: 7/25/2011 Start Qty: 1.00

Cust Item ID:

Required Date: 8/5/2011 Req'd Qty: 1.00

Customer:

Reference:

Run Start

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

260

0.00



HandFinish

HandFinishing

Memo

0.00

Hand Finishing

1- Install Wearplate & Ground Wire inserts as per Dwg D3507.

1-Inspect for Foreign objects

2-Install Fwd & Aft caps as per Dwg D3507 And Detail "A" & "B"

A/R 241 Sika Flex Batch: _____

Exp Date: _____

3-Install Wearplates as per Dwg D3507,

Note: Install (1) Bolt and (1) washer on Ground Wire insert on top of tube

Do not Install Screws where indicated on Dwg (Note #6)

A/R 241 Sika Flex Batch: _____

Exp Date: _____

4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube

A/R 55-o'ring lube batch: _____

5- Wing Walk as per Dwg D3507 and QSI 005 4.4

Batch: _____

1/2 0 22 11/08/15

M117316
01/15

M117316
01/15

M114189

M118313

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 72459

Monday, July 25, 2011 3:57:25 PM



Page 8

Item ID: D135-751-011

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube Installation

Start Date: 7/25/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 8/5/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

270

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

8/6/08/23

280

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

8/11-08-25

290

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

8/11/08/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 72459

Monday, July 25, 2011 3:57:25 PM



Page 9

Item ID: D135-751-011

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube Installation

Start Date: 7/25/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 8/5/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
300 	Packaging	0.00							
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D135-751-011								
	Location: <u>81</u>								
	PPP Rev: <u>B</u>								
310 	QC21- Final Inspection - Work Order Release	0.00							
QC	Memo	0.00							
Quality Control									

11/9/68

11/9/17

mf

11-09-07

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 1

Monday, July 25, 2011 3:57:30 PM

Work Order ID: 72459

Parent Item: D135-751-011

Parent Item Name: Skidtube Installation



Start Date: 7/25/2011

Required Date: 8/5/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A 06-06-21 New Issue JLM
 IPP Rev:B 06-12-18 As per Rev B JLM
 IPP Rev:C 07-12-11 ECN 1036 as per revB DD
 IPP Rev D 08.11.04 Added DT9431 to sequence 5 EC vcerified DD
 IPP Rev E 10.02.22 per pAR 09-043 EC verified by: DD IPP Rev:F
 10.06.09 remove seq110 DD verf:EC IPP Rev G 10.09.17
 added D3507-1-bent EC verified by:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

ALS7-1032-130

Purchased

No

Each

1,713.000

38



Insert

Location

Loc Qty

Loc Code

ST282

1713

117717

899

118386

814

D3507-1-BENT

Manufactured

No

120

Each

0.0000

1

1



Skidtube Assembly EC135

D3504-1

Manufactured

No

170

Each

19.0000

2

2



Crossbolt Spacer

Location

Loc Qty

Loc Code

LG

17

71130

17

LG001

2

53742

2

m-11/08/10

38X

BE 11/07/27
B 7/20/11

BE 11/08/11

2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, July 25, 2011 3:57:31 PM

Work Order ID: 72459

Parent Item: D135-751-011

Parent Item Name: Skidtube Installation

Start Date: 7/25/2011

Required Date: 8/5/2011

Start Qty: 1.00

Required Qty: 1.00

D3504-3 Manufactured No

170 Each

20.0000

1

1



Crossbolt Spacer

Location

Loc Qty

Loc Code

LG001

20

53743

20

D3504-5 Manufactured No

170 Each

17.0000

2

2



Crossbolt Spacer

Location

Loc Qty

Loc Code

LG

17

71226

17

D3505-1 Manufactured No

170 Each

0.0000

1

1



Web

D3506-1 Manufactured No

190 Each

23.0000

4

4



Doubler

Location

Loc Qty

Loc Code

ST063

23

51789

23

D3506-3 Manufactured No

190 Each

75.0000

2

2



Doubler

Location

Loc Qty

Loc Code

ST063

75

51790

75

BE 11/08/04

BE 11/08/04

BE 11/08/02
B 72200

B 11/08/08

B 11/08/08

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, July 25, 2011 3:57:31 PM

Work Order ID: 72459

Parent Item: D135-751-011

Parent Item Name: Skidtube Installation

Start Date: 7/25/2011

Required Date: 8/5/2011

Start Qty: 1.00

Required Qty: 1.00

MS20601-AD4W3 Purchased No
Rivet

190 Each 2,714.000 12

Location

Loc Qty

Loc Code

ST321

2714

114538

2714

ALS4-1032-225 Purchased No
Insert

260 Each 970.0000 1

Location

Loc Qty

Loc Code

ST282

970

110768

101

117717

9

118386

860

AN3C4A Purchased No
BOLT

260 Each 1,175.000 31

Location

Loc Qty

Loc Code

ST350

1175

117313

2

117688

187

117795

424

117872

22

118012

500

118112

40

12 11/08/08

M 111529 1X M-L 11/08/10

M-L 11/08/10

31X

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, July 25, 2011 3:57:31 PM

Work Order ID: 72459

Parent Item: D135-751-011

Parent Item Name: Skidtube Installation

Start Date: 7/25/2011

Required Date: 8/5/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C5A Purchased No 260 Each 1,033.000 2 2
Bolt

Location	Loc Qty	Loc Code
FP-A	7	
115835	7	
ST350	1026	
116419	28	
116549	42	
117343	500	
117764	300	
117872 ✓	156	

m-l 11/08/10

AN526C1032R10 Purchased No 260 Each 203.0000 2 2
Screw

Location	Loc Qty	Loc Code
FP-B	99	
108062 ✓	99	
ST327	100	
114494	100	
ST328	4	
110049	4	

m-l 11/08/10

AN960C10L NAS1149C0332 Purchased No 260 Each 0.0000 33 33
R

washer

D2965 Manufactured No 260 Each 3.0000 1 1
Cap, 105 Skidtube

Location	Loc Qty	Loc Code
FP006	3	
52057	3	

m118306

33X m-l 11/08/10

xl 11/08/10

1371371

xl

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, July 25, 2011 3:57:31 PM

Work Order ID: 72459

Parent Item: D135-751-011

Parent Item Name: Skidtube Installation

Start Date: 7/25/2011

Required Date: 8/5/2011

Start Qty: 1.00

Required Qty: 1.00

D2965-3
Cap
Manufactured No

260 Each 8.0000

1

1

Location

Loc Qty

Loc Code

FP005

8

50560 ✓

1

71300 ✓

7

D3492-1
Plug
Manufactured No

260 Each 44.0000

4

4

Location

Loc Qty

Loc Code

FP

44

69531

8

69819

36

B70185

4X

D3492-3
Plug
Manufactured No

260 Each 40.0000

4

4

Location

Loc Qty

Loc Code

FP

40

69822 ✓

12

70692 ✓

28

D3492-7
Plug
Manufactured No

260 Each 0.0000

2

2

B71881

2X

D3508-1
Wearplate
Manufactured No

260 Each 7.0000

1

1

Location

Loc Qty

Loc Code

FP016

7

61020 ✓

7

1X

Monday, July 25, 2011 3:57:31 PM

Shop Packet Print

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, July 25, 2011 3:57:31 PM

Work Order ID: 72459

Parent Item: D135-751-011

Parent Item Name: Skidtube Installation

Start Date: 7/25/2011

Required Date: 8/5/2011

Start Qty: 1.00

Required Qty: 1.00

D3508-3 Manufactured No

260 Each

4.0000

1

1



Wearplate



u 1108/18

Location

Loc Qty

Loc Code

FP021

4

38527

1

B72169

XL

71210

3

D3508-5 Manufactured No

260 Each

11.0000

1

1



Wearplate



m-l 11/08/11

Location

Loc Qty

Loc Code

FP021

11

67160 ✓

1

IX

71688

10

D3508-7 Manufactured No

260 Each

6.0000

1

1



Wearplate



m-l 11/08/11

Location

Loc Qty

Loc Code

FP021

6

67739 ✓

6

IX

D3558-1 Manufactured No

260 Each

8.0000

1

1



Gasket



m-l 11/08/11

Location

Loc Qty

Loc Code

FP014

8

50925 ✓

8

IX

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, July 25, 2011 3:57:31 PM

Work Order ID: 72459

Parent Item: D135-751-011


Parent Item Name: Skidtube Installation

Start Date: 7/25/2011

Required Date: 8/5/2011

Start Qty: 1.00

Required Qty: 1.00

D3558-3

 Gasket


Manufactured No 260 Each 12.0000 1



m-l 11/08/11

Location Loc Qty Loc Code

FP014 72170 ✓ 12 12 1

D3558-5

 Gasket


Manufactured No 260 Each 9.0000 1



1x
m-l 11/08/11

Location Loc Qty Loc Code

FP014 67485 ✓ 9 9 1

D3558-7

 Gasket


Manufactured No 260 Each 11.0000 1



1x
m-l 11/08/11

Location Loc Qty Loc Code

FP014 67162 ✓ 11 11 1

NAS1611-007

 O-RING

Purchased No 260 Each 284.0000 2



1x
m-l 11/08/11

Location Loc Qty Loc Code

FP-A 103697 ✓ 284 284 2

2x

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, July 25, 2011 3:57:32 PM

Work Order ID: 72459

Parent Item: D135-751-011

Parent Item Name: Skidtube Installation

Start Date: 7/25/2011

Required Date: 8/5/2011

Start Qty: 1.00

Required Qty: 1.00

NAS1611-010

Purchased

No

260

Each

106.0000

4

4



O-RING

Location

Loc Qty

Loc Code

FP	40	
117460	8	
118077	32	
FP-A	66	
110915	63	
115589	3	



m-p 11/08/11

4x

NAS1611-013

Purchased

No

260

Each

284.0000

4

4



O-RING

Location

Loc Qty

Loc Code

FP	79	
117291	2	
117887	77	
FP-A	205	
116582	5	
118384	200	



m-p 11/08/11

4x

S

AN3C4A

Purchased

No

280

Each

1,175.000

8

8



BOLT

Location

Loc Qty

Loc Code

ST350	1175	
117313	2	
117688	187	
117795	424	
117872	22	
118012	500	
118112	40	



SP 11-08-25

118628 8x

Monday, July 25, 2011 3:57:32 PM

Shop Packet Print

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, July 25, 2011 3:57:32 PM

Page 9

Work Order ID: 72459



Parent Item: D135-751-011



Parent Item Name: Skidtube Installation

Start Date: 7/25/2011

Required Date: 8/5/2011

Start Qty: 1.00

Required Qty: 1.00

AN960C10L NAS1149C0332 Purchased No

280

Each

0.0000

8

8



m 118354

8x Sp 11-08-25

washer

D3512-1 Manufactured No

280

Each

0.0000

2

2



B 71295

2x

Sp 11-08-25

Wearplate

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

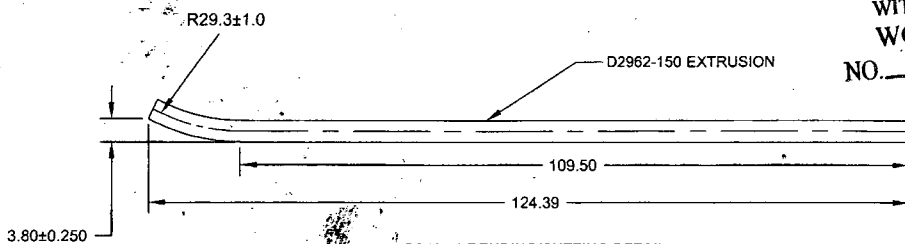
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

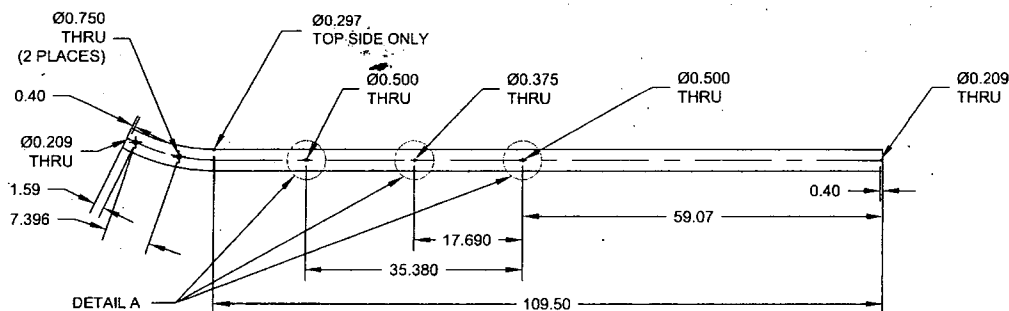
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

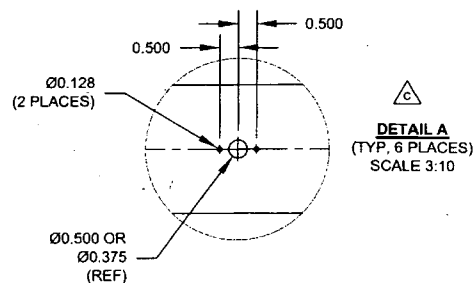
SHOP COPY 4
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 12459
11-07-25



D3507-1 BENDING/CUTTING DETAIL



D3507-1 DRILLING DETAIL



Qty	Part Number	Description
X	D3507-041	SKIDTUBE ASSEMBLY
1	D2962-150	EXTRUSION
1	D2965	CAP
1	D2965-3	CAP
4	D3492-041	PLUG ASSEMBLY
4	D3492-043	PLUG ASSEMBLY
2	D3492-047	PLUG ASSEMBLY
2	D3504-1	CROSS BOLT SPACER
1	D3504-3	CROSS BOLT SPACER
2	D3504-5	CROSS BOLT SPACER
1	D3505-1	WEB
4	D3506-1	DOUBLER
2	D3506-3	DOUBLER
1	D3508-1	WEARPLATE
1	D3508-3	WEARPLATE
1	D3508-5	WEARPLATE
1	D3508-7	WEARPLATE
1	D3558-1	GASKET
1	D3558-3	GASKET
1	D3558-5	GASKET
1	D3558-7	GASKET
38	AELS-1032-130	INSERT
1	AELS-1032-225	INSERT
31	AN3C4A	BOLT
2	AN3C5A	BOLT
2	AN526C1032-10	SCREW
33	AN960C10L	WASHER
12	MS20601AD4W3	RIVET

GENERAL NOTES:

- 1) FINISH:
CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING
D3505-1 WEB. POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART
QSI 005 4.3. ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER
DART QSI 005 4.4
- 2) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) DIMENSIONS: INCHES UNLESS OTHERWISE NOTED
- 4) WELDING TO BE DONE PER DART QSI 004
- 5) INSERT D3505-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND
WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER
DART QSI 015 AFTER BENDING
- 6) USE DART DRILL TEMPLATE DT8868 TO LOCATE AND DRILL Ø0.297 HOLES (38
PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION C-C (38
PLACES) AFTER FINISH. SEAL WEARPLATE BOLTS WITH SIKAFLEX-241/-291.
- 7) DO NOT INSTALL AN3C4A BOLTS AND AN960C10L WASHERS IN INDICATED
LOCATIONS

C	ADD D3504-5, FOR SKID GEAR DEFLECTOR; CHANGE FWD CAP BOLT TO AN526C1032-10 SCREW	DC	07.09.19
B	ADD GASKET, CHANGE HARDWARE MATL	PH	06.11.01
A	NEW ISSUE	PH	06.04.21
REV.	DESCRIPTION	BY	DATE
DESIGN	PH		
DRAWN	JIC		
CHECKED	PH		
MFG. APPR.	PH		
APPROVED	PH		
DE APPR.	PH		
DATE	07.09.19		
DART AEROSPACE USA, INC PORT HADLOCK, WA DRAWING NO. D3507 TITLE EC 135 SKIDTUBE REV. C SHEET 1 OF 2 SCALE NTS COPYRIGHT © 2006 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.			

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

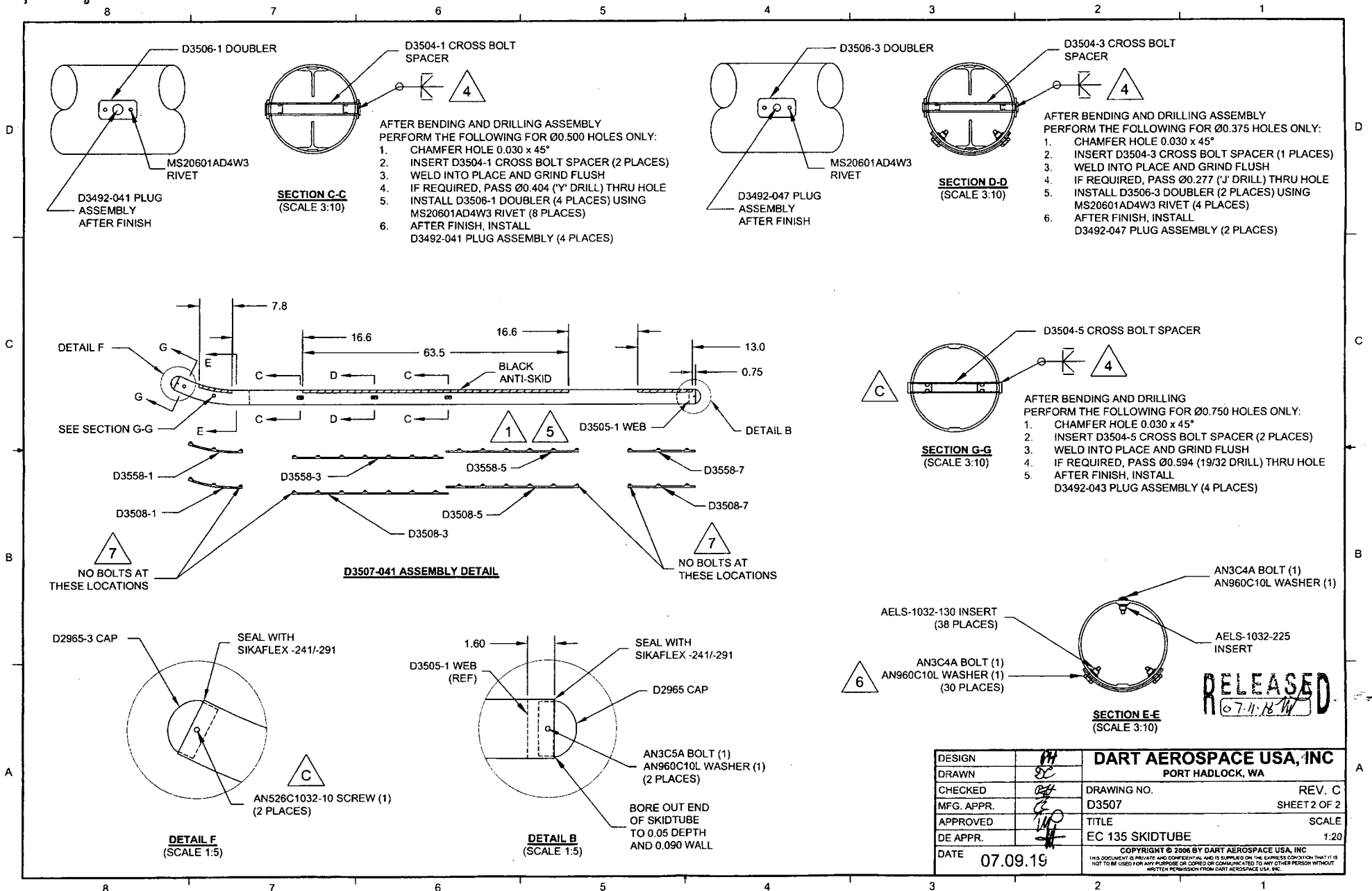
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

72459



DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED	BE	DRAWING NO.	REV. C
MFG. APPR.	CE	D3507	SHEET 2 OF 2
APPROVED	WFO	TITLE	SCALE
DE APPR.	WFO	EC 135 SKIDTUBE	1:20
DATE	07.09.19	<small>COPYRIGHT © 2006 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

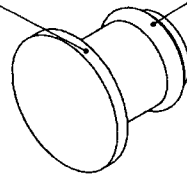
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

D3492-XX PLUG
(SEE TABLE)

NAS1611 O-RING
(SEE TABLE)



72459

D3492-XXX PLUG PARTS LIST

QTY -041	QTY -043	QTY -045	QTY -047	QTY -049	QTY -051	QTY -053	PART NUMBER	DESCRIPTION
X							D3492-041	PLUG ASSEMBLY
	X						D3492-043	PLUG ASSEMBLY
		X					D3492-045	PLUG ASSEMBLY
			X				D3492-047	PLUG ASSEMBLY
				X			D3492-049	PLUG ASSEMBLY
					X		D3492-051	PLUG ASSEMBLY
						X	D3492-053	PLUG ASSEMBLY
1							D3492-1	PLUG
	1						D3492-3	PLUG
		1					D3492-5	PLUG
			1				D3492-7	PLUG
				1			D3492-9	PLUG
					1		D3492-11	PLUG
						1	D3492-13	PLUG
		1					NAS1611-005	O-RING
			1				NAS1611-007	O-RING
1							NAS1611-010	O-RING
						1	NAS1611-012	O-RING
	1						NAS1611-013	O-RING
					1		NAS1611-015	O-RING
				1			NAS1611-016	O-RING

NOTES:

1) O-RING: POSSIBLE SUPPLIER P/N: NAS1611-XXX OR PARKER 2-XXX

RELEASED
2011-05-30

D	INCORPORATED DEO D3492-C-1. SHT 2 DIM C FOR -1 WAS 0.055. (SEE CAR11-048)	AJS	11.05.24
C	ADD -049/-051/-053, CHANGE DRAWING FORMAT	PH	07.10.05
B	ADD -047; UPDATE DIM A FOR -045	PH	08.05.11
A	NEW ISSUE	PH	08.01.04
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. D
MFG. APPR.	J.F.	D3492	SHEET 1 OF 2
APPROVED		TITLE	SCALE
DE APPR.		PLUG	2:1
DATE	11.05.24	COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

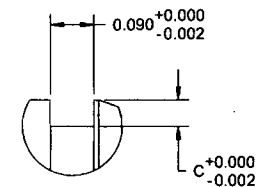
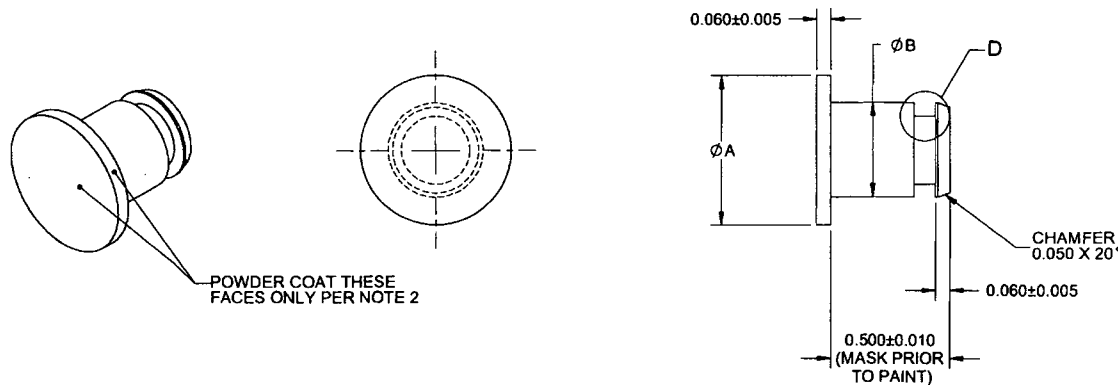
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

72459



DETAIL D

D3492-XX PLUG

D3492-XX PLUG MACHINING DETAILS

P/N	A	B	C	MATERIAL SPEC	
D3492-1	0.625	0.394	0.050	M6061T6R0.625	△D
D3492-3	0.750	0.582	0.045	M6061T6R0.750	
D3492-5	0.375	0.188	0.045	M6061T6R0.375	
D3492-7	0.500	0.270	0.045	M6061T6R0.500	
D3492-9	0.938	0.750	0.045	M6061T6R1.000	
D3492-11	0.850	0.664	0.045	M6061T6R0.875	
D3492-13	0.750	0.510	0.045	M6061T6R0.750	△D

NOTES:

- 1) MATERIAL: ALUMINUM 5052-H32 OR 6061-T6 OR 1100-0 PER QQ-A-225/7 (5052) OR QQ-A-225/8 (6061) OR QQ-A-200/8 (6061) OR QQ-A-225/1 (1100) (REF. DART MATERIAL SPEC M6061T6R0.000)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE GLOSS (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A

RELEASED
2011-05-30

DESIGN	PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	A.S.		
CHECKED		DRAWING NO.	REV. D
MFG. APPR.	JES	D3492	SHEET 2 OF 2
APPROVED		TITLE	SCALE
DE APPR.		PLUG	4:1
DATE	11.05.24	COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 257

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliot
Job number: B666P
Part number: D135-751-011
Description: 135
Welding Process: Tig[☒] Mig[]
Base material: Aluminum
Current: AC[] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier Pat. Lewis Date of Test Coupon 11-06-22
Welder Barclay Elliot Date of Test Coupon 11-06-22

The above named individual is qualified in accordance with AWS D17.1.2001 to weld